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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TSOY, ELENA

ART UNIT PAPER NUMBER

1762

DATE MAILED: 01/16/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/884,906

Applicant(s)

YOON ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election with traverse of Claims 1 and 2 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that no serious burden on the Examiner exists. This is not found persuasive because independent and distinct inventions of Groups I and Groups II, III have separate classification, separate status in the art, and a different field of search as defined in MPEP § 808.02 so that the search and examination of inventions of Groups I and Groups II, III would place serious burden on the Examiner. Although Groups II and III are classified in the same class and subclass, they are directed to different subject matter so that the search and examination of inventions of Groups II and III would not overlap, and therefore, would also place serious burden on the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The disclosure is objected to because of the following informalities:
- page 1, paragraph 3, "200□" seems to be incorrect. Appropriate correction is required.
- page 3, last bottom line, "pyrrole 1,2-epoxy-5-hexene" should be changed to -- pyrrole, 1,2-epoxy-5-hexene --.
- page 4, three bottom lines, "25-35 □" should be changed to -- 25-35 microns --.
- page 4, last bottom line, "pyrrole,, 1,2-epoxy-5-hexene" should be changed to -- pyrrole, 1,2-epoxy-5-hexene --.

page 5, line 6, "the chemical structure of the monomer are different" should be changed to -- the chemical structures of the monomers are different -- or -- the chemical structure of the monomer is different --.

Claim Objections

3. Claims 1, 2 are objected to because of the following informalities:

Claim 1, line 4, "pyrrole 1,2-epoxy-5-hexene" should be changed to -- pyrrole, 1,2-epoxy-5-hexene --.

Claim 2, line 6, "rotating said reactor from 1 to 50 rpm" should be changed to -- rotating said reactor at from 1 to 50 rpm --.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 4-5; Claim 2, two last lines, improper Markush group "monomer selected from A, B --- and Y" renders the claim indefinite. The proper Markush group should be recited either in the conventional manner as "monomer selected from the group consisting of A, B --- and Y" or alternatively as "wherein said monomer is A, B --- or Y".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by France et al (US 6,428,861).

France et al disclose a method of surface modifying particulate matter such as silica powder (See column 1, lines 47-62) comprising coating the surface of said silica by plasma polymerization (See column 2, lines 66-67) of a monomer, wherein said monomer is aliphatic vinyl compounds of general formula $R_2CH=CHR_3$, where R_2 is hydrogen, and R_3 is aliphatic hydrocarbon group of up to 10 carbon atoms that is substituted by hydroxy, amino, etc., i.e. said monomer is allylamine or allyl alcohol (See column 8, lines 7-12). France et al further teach that the surface characteristics of powders including silica powders is a very important factor when powders are used in many industrial applications, e.g. in *rubber*, paint etc.; and plasma polymerization techniques offer the opportunity to deliver the powders uniform, ultrathin and pinhole free coating (See column 1, lines 47-62).

As to the coated silica powders being for EMC, it is held that a recitation of the intended use of the claimed invention *must* result in a *structural difference* between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the

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prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

It is the Examiner's position that there is no structural difference between the surface modified silica of France et al and that of claimed invention since a method of France et al for preparing the surface modified silica is identical to that of claimed invention. Therefore, the surface modified silica of France et al is capable of performing the intended use, and consequently it meets the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over France et al (US 6,428,861) in view of Drauglis et al (US 4,374,717).

France et al, as applied above, further disclose that plasma polymerization coating method of surface modifying particulate matter such as silica powder (See column 1, lines 51, 64) comprises the steps of:

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1) charging said particulate matter into a plasma polymerization reactor (See column 5, lines 44-50), followed by vacuuming to *at least* 20 mtorr (i.e., less than 2×10^{-3} torr) (See column 6, lines 35-48);

2) introducing a monomer into said reactor (See column 5, lines 45-58; column 7, lines 12-14); and

3) rotating said reactor, with conditions of having a residence (treatment) time of 0.001-60 seconds (See column 7, lines 50-57); wherein said silica has size of 10-30 microns (See column 2, lines 51-54); and said monomer is aliphatic vinyl compounds of general formula $R_2CH=CHR_3$, where R_2 is hydrogen, and R_3 is aliphatic hydrocarbon group of up to 10 carbon atoms that is substituted by hydroxy, amino, etc., i.e. said monomer is allylamine or allyl alcohol (See column 8, lines 7-12).

France et al fail to teach that: (i) the monomer is introduced into the plasma polymerization reactor via a steel pipe; (ii) plasma power is of 10-40W, and reactor is rotated at 1-50 rpm.

As to (i), since France et al is silent about material of pipes, it is clear that pipes of France et al for injecting the monomer are conventional pipes which are generally steel pipes, as evidenced by Ogisu (US 4,584,965, column 2, lines 55-56).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used steel pipes for injecting a monomer in a method of France et al since it is well known in the plasma art that generally steel pipes are used as injection pipes, as evidenced by Ogisu.

As to (ii), France et al further teach that plasma glow discharge is generated using e.g. radio frequency (See column 7, lines 32-37). However, France et al fail to teach an operating power level.

Drauglis et al teach that deposition rates of acetonitrile polymer from acetonitrile monomer are directly proportional to power level and operating pressure; and for the polymerization of acetonitrile monomer it is preferred to operate radio frequency generating apparatus at a power level of 25 Watts (See column 3, lines 62-68; column 4, lines 1-24). In other words, power level is one of result-effective parameters in plasma polymerization coating process. Also it is clear from teaching of France et al that rotating speed of the plasma polymerization reactor is also one of result-effective parameters.

It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant polymerization coating process parameters (including claimed power level of 10-40 W and claimed rotating speed of 1-50 rpm) through routine experimentation in the absence of showing criticality.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (703) 605-1171. The examiner can normally be reached on 9:00-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in cursive script that reads "Elena Tsoy".

Elena Tsoy
Examiner
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January 10, 2003